195?. **File No.** C/S/1052

P. W **DEPARTMENT**

Q **BRANCH**

---

**Subject:** Karnatak

Iron and Steel B Class

Policy matters

( Copies from file C/S 1052/II)

Common B Class

✓

B Class Karnatak

C/S/1052

**File No.**

Stk. Book Slip 24 A

When I had recently been to Sabarkantha it was urged by the people there that the control on iron and steel and particularly corrugated sheets was causing a great hardship to the people. In fact the permits were drawn in the name of the agriculturists and through them those who required the sheet secured their requirements. This has a great demoralizing effect. It would be better if corrugated sheets in particular could be decontrolled.

Id/-

Dy, Minister, P. W. D.

6- 10- 52.

M., B. C.

S. S. N.

4. 7.

C I S 1952

P. W. D.
G.

Submitted with reference to the Dy, Minister, P.W.D.'s note at page 1 ante.

2. Following is the tonnage of iron and steel allotted to this state by the Govt. of India for the periods I/52 to IV/52 for meeting the demands of steel for non-agricultural purposes:-

| Period | Tonnage |
|---|---|
| Period I/52 | 1915 |
| Period II/52 | 2315 |
| Period III/52 | 2315 |
| Period IV/52 | 2315 |

The increase in tonnage from period II/52 is due to the fact that 400 tons of steel for refugee fabrication which was being allotted separately has been merged in the non-agril. quota from Period II/52 onwards.

3. Even though the quota is not more than for previous years the position is better because the pent-up demands of war-time and post-war period are now mostly over, In view of the mass accumulation of stocks of iron and steel free sale was allowed by the Govt. of India in respect of heavy structurals etc. Free sale was also allowed by the Govt. of India for such stocks as were held by Registered Stockholders/Rerolling mills other than Registered Producers, on 1-1-1952 and were reported to the State Licencing Authorities concerned on or before that date., but which remained either (a) uncovered by permits or (b) covered by issue of permits, but for which no financial arrangements were made by the allottees within the period of validity of permit issued. This free sale was subject to the conditions mentioned in para 2 of the Govt. of India, Ministry of Commerce Notification No. SC(A)-4 (129)/52, dated 12th April 1952, In view of the further improved supply position of steel, the t Govt. of India have allowed free t sale of iron and steel from such stocks as were held by a person other than a Registered Producer or Controlled Stockholder for a period exceeing sixty days from the date of receipt by the State Licencing Authority of first intimation of such stocks but which remain either (a) uncovered by permits, or (b) covered by issue of permits, but for which no financial arrangements .....

S.J. 8.N4.7.

arrangements have been made by the allottees within the period of validity of the permit issued, subject to the conditions mentioned in para 2 of Govt. Notifn. Ministry of Commerce and Industry No.S.C.(A)-4(51)/II, dated the 15th sept. 1952.

4. In view of this improved supply position of steel, this Govt. has decided to relax our policy on of distribution of iron and steel as follows:

1) the present limit of 1200 sq.ft. per tenement should be relaxed.

2) Undertaking from the parties to treat 25% of the patients free in case of construction of private nursing homes and hospitals etc. which is at present required should be done away with.

3) Policy of not releasing steel for erection of buildings for religious purposes like temples, masques, Religious Halls etc. should be done away with.

5. This shows that there is improvement in the supply position of steel. As stated above control to some extent has been relaxed. Regarding the Dy.Minister's suggestion for decontrol of C.I.sheets, it may be stated that it is not known how much tonnage out of the total quota of steel for non-agril. purposes per quartermentioned at 'A' in para 2 above is received in C.I. sheets. It may however be stated that the R.O.(I & S) in another case had stated that C.I.Sheets issues are uptodate, i.e. supply is in keeping with the demand. The statement ly of the monthly report for July 1952 regarding distribution etc. of the Iron and Steel shows that the demands for C. I.Sheets are generally met within one month. A reference will have to be made to the Govt. of India for removal of the control of the distribution of C.I. sheets if this is advisable at present and the supply position permits this. The R.O.(I & S.) Bombay may first be requested to examine the supply position of C.I.Sheets and to offer his remarks on the Dy.Min's note dt. 6-10-52.

I belive R.O.I.s uptodate for Greater Bombay.

6. As regards misuse of sheets from Agril. quota, a copy of the Dy.Min's note may be forwarded to the A. & F.D. for action. That Deptt. will be requested to submit the case to the Dy.Min., P.W.D. in that Deptt. at suitable stage.

I am not sure about the Dists

Id/-
26.10.52

Id/-
25.10.
Dy.Min.(PWD.)

Id/- 27.10.

Office of the

Rationing Officer (Iron and Steel).

Subject :- Relaxation and modification to be made in the policy of distribution of iron and steel in the Bombay State.

As Government is aware, the supply position of iron and steel has been steadily improving. The control over the distribution of heavy structurals- both standard and defective - etc. Further relaxation is made by the latest Notification No. SC(A)-4(51)/II, dated 15-9-52 from the Government of India, addressed to all State Governments (copy enclosed for ready reference )in which they have now permitted free- unlicensed sale of stocks held by the Registered Stockists for a period of more than sixty days for which either no permits have been issued by the State Steel Licensing Authority or in case the permits are issued, the allottees have not made financial arrangements before the expiry of the validity dates.

So far as this office is concerned, we have been able to meet demands for R. C. C. upto the end of August 1952, including Bombay proper, and for C.G.I. Sheets issues are being made for the September 1952 applicants, or in other words, we are more or less up-to-date. The quotas of Collectors ~~of~~ for Districts have also been met up to the end of period III/1952 and issue of period IV/1952 quota is under progress. The supply position of rounds as well as Sheets in is fairly satisfactory. Materials are coming in now, and the stage has now come for relaxation in the distribution Policy adopted by the State in order to utilise and distribute the materials within a period of two months of their receipt. In this connection, the following proposals are submitted for Government's approval:- 1. The present limit of 1200sq. ft. per tenement as laid down in Government Memorandum, Labour Department No. 576/46/51426/I-E, dated 22-12-1949 P. T.O.

(copy enclosed) should be completely relaxed.

It may be stated here that the number of applications which are received for tenements exceeding 1200 sq.ft. are very few - say not exceeding 4% of the total demands.

2. The undertaking taken from the parties to treat 25% of the patients free in the case of construction of private nursing homes and hospitals as per Government Notification P-1166 of 14-7-1950 (copy enclosed ) should now be done away with. This will enable new private hospitals, nursing homes, maternity houses, etc., etc. to come up.

3. According to Government orders contained in Government Memorandum, Political and Services Department No.576/46/1464-P. dated 24-2-1947 (copy enclosed for reference), no steel is being issued for erection of buildings meant for religious purposes like Temples, Mosques, Religious halls, Sabha Mandaps, etc. In view of the improved supply position of iron and steel, it is proposed to supply steel for these purposes also.

4. At present the supply of steel for office buildings is restricted to very essential constructions only. In view of the favourable supply position of costly re-rolled materials from the Unregistered Producers, we may accept applications for all types of office buildings.

5. It is further proposed to permit the change in use in the case of buildings which are under construction or already constructed but not occupied upto 50% of the total carpet area provided the owners apply to this office for permission for change in use. This office may also consider 100% change of use from residential to Non-residential provided the owner is willing to surrender all steel, issued to him by this office. In consequence of the above relaxation, it is proposed to liberalize the prosecution of parties committing technical misuse of materials viz. (a) Sheets released for the roof for sides; (b) use of steel or sheets released for one tenement on another tenement, the owner being the same. In other words if the party has utilized materials for the construction

of his own building, no action may be taken against him. The quantities of such mis-use may be limited to one ton (100 Sheets) in the case of C. G. I. Sheets and upto 5 tons in the case of other steel.

Enclosed herewith is a Press Note embodying the above proposals, which may kindly be issued, if approved by Government.

Suitable early orders on the proposals are requested.

Id/-

26/9.

Rationing Officer (Iron and Steel).

U. O. R. No. G 71 M dated 25-9-1952
to the Public Works Department, Bombay.

The assumption is that steel supply position in the NA section is easy. Is that correct? Office should please check.

R.O. informed me today personally that he is up to date with release of September demands, (at least Greater Bombay area). We may in that case remove carpet area restriction for the release of steel for residential purpose. No other relaxation is needed at present.

Id/-

9/10

Orders for

M(Housing ) 'A' 'B' 'C' may be relaxed Press Note may be issued.

Id/-

11/10

S.S.N.
5.7.

(For publication in part II - Section 3 of the Gazette of India dated the 29th November, 1952).

Government of India

Ministry of Commerce and Industry.

New Delhi, the 25th November 1952.

_N O T I F I C A T I O N_

No. SC(A)-16(223). - The following General Authorisation issued by the Iron and Steel Controller under Clauses ~~Xxx~~ 4 & 5 of the Iron and Steel (Control of Production and Distribution) Order, 1941, is published for general information :-

"In exercise of the powers conferred on me under Clauses 4 and 5 of the Iron and Steel (Control of Production and Distribution)Order, 1941, I hereby authorise the acquisition and disposal, by any person without a permit of any quantity of Wrought Iron Pressure Pipes and Tubes, Steel Pressure Pipes and Tubes and Cast Iron Pressure Pipes of indigenous manufacture.

Sd/- C. R. NATESAN

"IRON AND STEEL CONTROLLER."

Id/-

3/12.

Sd/- D. HEJMADI.
Under Secretary to the Govt. of India.

To

The Manager,

Government of India Press, New Delhi.
No.SC(A)- 16(223).

Advance copy forwarded to :-

1. All State Govts.
2. The Iron and Steel Controller, 33, Netaji Subhas Road, Calcutta- 1.
3. Law Officer, Central Enforcement Directorate, New Delhi.

By order etc.,,

Sd/-( D. Hejmadi ).

Under Secretary to the Govt. of India.

S.S.W.

5.7.

No.SC(A)-3977/52.
Government of India.
Ministry of Commerce and Industry

New Delhi, the 29th August, 1952.

From

C.P.Natesan, Esqr.
Deputy Secretary to the Government of India.

To

All State Governments.

Subject : Economy in use of steel.

Sir,

I am directed to say that in view of the existing shortage of steel, the question affecting economies in the use of steel has been engaging the attention of the Government of India for some time. At the instance of the late Director General of Industry and Supply, the Institution of Engineers (India) appointed in 1949 a committee to study this question in all its aspects. A copy of the report of this Committee (without the annexures referred to) is enclosed. The Government of India consider that the report contains valuable recommendations and that if they are given effect to by all authorities in India responsible for the use of steel, it should be possible to effect considerable saving in the use of steel in India and to put to the best possible use the limited quantities available. I am accordingly to request that the State Government may kindly bring the recommendations of the Committee, so far as they are concerned, to the notice of all authorities under them who are responsible for the steel consumption of steel so that they may take them into account in utilising the allotments of steel made to them from time to time.

2. I am to add that action is already being taken by the Government of India through the Indian Standards Institution on the recommendations of the Committee relating to standardisation. Pending standardisation on a long term basis, it is considered that engineers might usefully consider the following interim measures:

i) Adoption of the latest British, United States, or German specifications in the matter of sections and designs of structures. (The adoption of the more recent standards as in other countries would help to bring down considerably the consumption of steel, pending the determination of relative data to suit our own conditions);

ii) Careful scrutiny of designs at the time of steel allocation;

iii) Revision of the standard designs in the light of more recent data available;

These points may also kindly be brought to the notice of the authorities concerned under the State Government.

Yours faithfully,

- Sd/-(C.P.NATESON)
Deputy Secretary to the Government of India.

No.SC(A)-3927/52

Copy forwarded for information and action on similar lines so far as they are concerned to:

1) Ministries concerned at the Centre.

2) The Indian Standards Institution (Through the TMP Branch)

By order, etc.

Sd/-(D.Mehrotra)
Under Secretary to the Govt. of India.

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ITEM NO. 6

REPORT OF THE COMMITTEE ON STEEL SAVING APPOINTED BY THE COUNCIL OF THE INSTITUTION IN MAY 1940.

CONTENTS.

Section no.

1) Composition of the Committee, Terms of Reference and Proceedings.

2) Introduction -- -- --
3) Use of alternative materials.
4) Welding
5) Design Improvements.
6) Use of Steels of higher performance and
7) rationalisation of steel sections
8) Miscellaneous.

REPORT OF THE COMMITTEE OF STEEL SAVING APPOINTED BY THE COUNCIL OF THE INSTITUTION IN MAY 1940.

COMPOSITION OF THE COMMITTEE, TERMS OF REFERENCE AND PROCEEDINGS.

1) Names of the members of the committee:

| | |
|---|---|
| Dr. A.N.Pandya | ... Convenor |
| Dr. N.L.Rao | ... Member |
| Dr. V.M.Ghatage | ... Member |
| Mr. Rai Bhadur Kanwar Sain | ... Member |
| Mr. V.P.Antia | ... Member. |

2) The Committee was appointed by the Council of the Institution of Engineers (India) at the request of the Directorate-General of Industry and Supply, the Government of India, to go into the question of steel Saving in India.

3) The Committee held three Meetings at Bombay (19th and 20th September 1940), Calcutta (27th and 28th October 1940) and again at Calcutta (25th February 1950) and had discussions with some of the prominent local Engineers with a view to obtain their views and suggestions. The proceedings of the Meetings together with related papers are given in annexure I to this Report. Other notes are given in Annexure II.

## INTRODUCTION.

1) The subject of Saving Steel assumed great importance during World War-II, due to the enormous demands made on an industry which was designed primarily to meet peace time requirements. In India we have two steel making mkt units, one of the Tata Iron and Steel Company Limited and the other of the Steel Corporation of Bengal Ltd. with a total estimated capacity of approximately one and a quarter million tons. Due to various present day difficulties, the actual production of late has been at the rate of a little less than a million tons a year. On the other hand, the demand for steel in various categories is estimated to be approximately two to two and a half million tons.* There is thus a deficit of one to one and half million tons, which can be met either by an expansion of our steel making capacity or the import of steel from outside.

2) As regards the first course, the Committee understands that both the Tata Iron and Steel Co., Ltd. and the Steel corporation of Bengal Limited have plans to increase their production but it is bound to take considerable time before the desired increase in production is achieved. The Government of India are also making plans to set up one or two new plants with a capacity of half a million tons each but here again it might take a few years before they can be put up and brought into production. Also with the completion of power projects and continued industrial and other developments in India, there is bound to be for a long time a lag between production and requirements of steel. It is therefore necessary to keep great and continued vigilance over measures aimed at achieving steel economy.

3) As regards imports, it is well known that our balance of payments position is most unfavourable due largely to our requirements of food, capital equipment, etc. The recent devaluation of the rupee in relation to the dollar has made our position even more difficult due partly to the increase in the price of foreign steel and the scarcity of hard currencies.

4) We are at the beginning of an era of industrial development, which cannot be accomplished without steel which happens to be the most important of industrial raw materials. In order that our plans are not delayed or held up, it is of the utmost importance for us to have all the steel we require. This means very clearly that we should economise in the use of steel in every possible way. It is the object of our Report to suggest a few ways and means of saving steel, particularly in the structural industry. We realise that there is great scope for saving steel in the manufacturing industries, but we neither had the time nor the opportunity to investigate this important aspect of the problem.

5) Even countries like Great Britain with a much larger production capacity have been obliged to use steel in the most economical manner and the British Parliamentary and Scientific Committee has recently examined the matter and made certain recommendations, which are given in a most illuminating Memorandum, which is given in an Appendix "J" (Annexure II) to this Report.

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* See the first Report of the Iron and Steel (Major)Panel of the Government of India, 1946.

6) From the enquiries we have made we are convinced that great economies can be effected if the measures proposed by us are adopted. Unless this problem is tackled urgently and energetically, we feel that a most valuable raw material will continue to be wasted with detriment to the country and its future.

It is possible that economy of steel may be achieved in a few instances at the expense of amenities or architectural beauty or even cost; but we believe that a comparatively poor and underdeveloped country can ill-afford the luxury of steel-wastage and it is for the Government, engineering profession and the people of this Country to devise and adopt all possible methods of saving steel.

PART A USE OF ALTERNATIVE MATERIALS.

1) Before the steel came into common use for structural purposes, our buildings and other structures were built up of stone, bricks, timber, tiles, etc. The use of these materials particularly for small span structures and for items such as arches, lintels, etc. should be encouraged wherever possible. Unreinforced concrete jack arches may with advantage be used extensively for roofing.

2) As regards timber, great advances have been made in recent years in its treatment, and use. Unfortunately we find that the structural properties of Indian timbers are not so well-known to Indian engineers nor are the new and more efficient methods of joining timber members yet adopted in this country. The Committee therefore recommends that the Government and the Institution of Engineers should undertake a countrywide campaign to popularise the use of timber. We should also recommend an expansion in the activities of the Forest Research Institute and a wider dissemination of the knowledge and experience gathered in the Institute on the properties and utilisation of Indian timbers.

It is recommended that a special Committee for standardising timber joints and for investigating laminated timber construction should be appointed.

The Committee recommends in particular that the directional properties of timber (strength along tangential and across the grain) should be carefully considered.

The Committee also recommends that the use of timber should be encouraged for transmission line frams and telephone and telegraph poles.

3) Another material which can be used as an effective substitute of steel is concrete both plain and reinforced. It is well-known that the composite material known as reinforced concrete derives its efficiency and economy from the fact that concrete acts in compression and the steel reinforcement in tension, thus each performing the function for which it is best suited. A much wider use of this modern material would in our opinion lead to a great saving in steel and we recommend that wherever possible steel structures should be replaced by reinforced concrete structures.

In particular it should be made imperative that two or three storey buildings and power house structures should be constructed in reinforced concrete and steel should no ordinarily be used.

4).....

4) The latest development in the field of reinforced concrete has been in the direction of prestressed concrete which requires even less steel reinforcement and uses concrete more efficiently. The Committee therefore recommends greater use and encouragement of the novel technique of making prestressed concrete, which has already been introduced by the Indian railways for bridge girders.

The use of prestressed concrete is greatly hampered in this country on account of lack of production of high tensile steel wires of small sizes required in the construction. We strongly advise that steps be taken to either produce these wires or import them. Technical assistance in the use and application of prestressed concrete must also be made available to the engineering profession till the method becomes wellknown.

5) The development of the aircraft industry and with it the aluminium and magnesium industries has now made available a large range of light alloys which compare very favourably with steel as regards strength, durability, etc. Unfortunately, the comparative price of light alloys is much higher than that of steel and we are not yet producing sufficient quantities of aluminium and its alloys to meet our other requirements. In view however of the inherent advantages of light alloys, the Committee recommends their use particularly in bridges of large spans, where the percentage of dead load to design load is high, and in transport vehicles industry where the dead weigh and operational efficiency are of considerable importance. The experience gained by introducing the material now will be of benefit later and enable the material to be used with greater confidence when the prices are reduced.

A note on the use of aluminium alloys for structures by one of the Members is given in appendix "E" (Annexure II) enclosed.

6) In view of the availability of bamboos of different sizes, it is recommended that the Government may extend special research facilities and otherwise encourage study of bamboos as reinforcing material.

PART B WELDING.

1) The technique of welding together various parts of steel has not only been perfected but it has been very widely adopted in all engineering industries. The use of welding not only eliminates rivet and bolt holes which weaken the section but it has made possible the use of more advanced methods of design based on the principle of continuity or the rigidity of connections. The Indian Railways have reduced the quantity of steel for bridges by over 20% by adopting welded designs. It has encouraged the production of more efficient and economical sections better suited for designs based on continuity. Welding has also made it possible to replace complicated and heavy castings by lighter and simpler frames mainly in the mechanical engineering industries. During World War II, welding was widely adopted in ship building, transport vehicle, ammunition and other industries with consequent economy in steel.

2) One of the advantages of the technique of welding, apart from its simplicity, is that the plant and machinery required for the fabrication of steel work is cheaper, lighter and portable. The use of welding thus enables the materials to be sent directly from the producers to the site of works saving double handling and transport. In a country of great distances like India, particularly when so much emphasis is being placed on regional development, it is obvious that welding should be

encouraged in every way.

3) The Committee therefore recommends that wherever possible preference should be given to welded as against rivetted or bolted structures. In order to ensure welding of a requisite standard it is recommended that a Code of Welding should be prepared to coverl all Indian requirements and in the meantime, the IES Code of Practice for Electric Arc Welding of steel structures may be adopted.

4) As is wellknown the quality of welding depends very largely on the quality of electrodes and the skill of the operator. Introduction of standard periodic tests for welders and of inspection of important welds by non-destructive methods, e.g. X-ray, will enable welding technique to be expanded with confidence. In both these respects, it is imperative to take early steps to expand the manufacture of suitable electrode and the training of welding operators.

5) The Committee recommends that Government should examine the welding electrode manufacturing industry and give all possible assistance to improve quality and increase output. Government should also institute practical courses on welding in their technical training establishments and organise a system of certificates which could be recognised all over the country.

6) The combined advantages of welding and high tensile (low alloy) steel are so great that it is recommended that steel manufacturers should make every effort to develop weldable high tensile steel.

7) Fabrication of beams of greater strength (a) by cutting the web of rolled steel joists and introducing another web plate by welding, (b) by making trough shaped cuts in rolled steel joists and staggering the cut pieces and welding, and similar methods, should be encouraged and given wide publicity.

8) The Committee recommends that in heavily reinforced structures and wherever sufficient supervision to ensure good welding is available, reinforcing bars should be welded instead of being lapped as is done now. This will ensure considerable saving.

PART C — DESIGN IMPROVEMENTS.

1) Most of the designs made in this Country are based on out of the date and antiquated methods which do not take into account the improvements recently made in the qualities of materials, increased knowledge of design based on Research and experience of behaviour of structures in actual practice. It is therefore of the utmost importance to revise specifications and Codes of Practice of Structural steel work, Reinforced concrete and other constructional materials.

The Committee recommends that through the courtesy of our foreign embassies and other channels, a complete collection of the different codes on of steel and concrete of all countries be made to further the studies in design and workmanship.

2) Two of the most important factors which affect both safety and economy are loads and stresses. The Committee is of the opinion that considerable investigation and research require to be carried out on these points with special reference to Indian conditions, it recommends that as regards structural steel work, we should.....

L But in view of the urgency and importance of Tarina steel

work, we xx should immediately adopt either of the following

a) B.S.S.449(1948) for -
"The use of structural steel in Building"
b) Indian Railway Standard code of practice for
"Design of steel structures other than
Bridges- 1948"

From the enquiries we have made we are satisfied that the Tata Iron and Steel Co., Ltd. and the Steel Corporation of Bengal Limited can produce steel of the requisite yield point to comply with the B.S.S.449 (1948).

3) It has been brought to the notice of the committee that most of the steel other than that produce by the two main producers does not always comply with any recognised specifications as to quality, composition, strength, etc. The Committee therefore recommends that all structural steel made in this country or imported from abroad x should comply with a Standard Specification such as IBS 15-5 for steel plates, sections, bars, etc. or B.S.S. 15. It would otherwise be unsafe and impossible to revise and bring up-to-date Codes of Practice for structural steel work and reinforced concrete.

4) As a long term measure, the committee recommends the setting up of a joint committee of Government representatives, professional engineers, steel producers and the Indian Standards Institution to examine this whole matter and prepare a Standard specification and Code of Practice for the use of structural steel.

5) As regards reinforced concrete, we have noted with satisfaction that the Indian Standards Institution are at present engaged in preparing a specification and code of practice ~~which~~ which should be ready in the near future.

6) The Committee is of the opinion that the present teaching of the theory of structures in engineering institutions is inadequate and that it is very necessary to inaugurate post-graduate courses in the advanced theory of structures in all engineering institutions of University standard.

7) ~~The Committee recommends that other authorities~~ The Committee is of the opinion that considerable economies in steel can be made by a thorough revision of some of the standards designs in use in this country, and noted with satisfaction the new designs of bridges, wagons and coaches which have been undertaken by the Railways.

The Committee recommends that other authorities should be advised to take such work in hand without delay.

8) The Committee ~~xxxxxx xx xxxx~~ x is of the opinion that most of the steel structures at present being designed are unnecessarily heavy due partly to the use of old specifications and codes and partly the inexperience of designers. The Committee recommends that the design of all steel structures involving the use of more than three hundred ~~xx~~ tons each should either be entrusted to specialist designers or submitted for scrutiny by Provincial or regional panels of specialist engineers before steel is allocated and fabrication is taken in hand except where suitable Government controlled design organisation exists.

9) The Committee desires to draw attention to the following publications of the British Ministry of Works, which include most valuable ~~publications~~ recommendations, comments and suggestions on the saving of steel:

a) Post war building studies No. 7 of Steel Structures by a committee convened by the Institution of Civil Engineers - 1944.

b) Post war building Studies No. 8 on Reinforced concrete Structures by a committee convened by the Institution of Structural Engineers - 1944.

10) The Committee is of the opinion that the prevalent practice of basing designs on the old concept of "Factor of safety" is wasteful and that this aspect should be investigated thoroughly in the light of the methods used in the aircraft industry.

The Committee strongly recommends the basing of permissible stress in steel on its ~~as~~ yield s strength instead of on its ultimate strength.

11) In the case of static loading the method of using a "load Factor" depending on the type of structure and then stressing the material to its ultimate strength would give a more economical design. This method would also be useful while designing light-alloy structures where a pronounced yield point is not available.

12) The allowances made for wind pressures in present designs in India is wasteful as it is wellknown that the main destructive effect of wind is due to suction rather than pressure. Also the wind pressures vary considerably over the country so that the allowance need not be same all over India. It is suggested that a special Research committee be appointed to study wind pressures with the aid of wind tunnels and other equipment and make specific recommendations

13) The design engineers allover the country must be kept fully informed of the steel sections produced in the country s that designs may be made to suite these sections avoiding the present wastage due to cutting.

14) The committee recommends the appointment of a Special Committee immediately to investigate whether increase in stresses in concrete as given in the British code of Practice C.P.114/1948 can be made applicable to India and whether allowable stress in reinforcing steel can be increased to 20,000 lbs. per sq.inch instead of 18,000 lbs. per sq. inch. The committee is of opinion that increased stresses should be allowed.

15) In lapping reinforcing bars, British Code of Practice CP:114/1948 recommends the use of 20 bar-diameters instead of the former figure of 45 diameters. Considerable economy of steel can be effected by this and the Committee recommends its adoption.

16) It has been suggested to the committee that a considerable amount of steel is wasted in foundation work. While it is recognised that great fineness in the design of foundations is not possible at present, emphasis should be placed on schemes based on ~~measurements~~ correct appreciation of soil pressures and subsoil conditions. Heavy grillage foundations as with two tiers of steel Joints should be avoided. Legislation should be made if necessary, so that spread foundations may be provided even after a

ever over a neighbour's soil and cantilever foundations involving more steel may be avoided.

17) Intensity of loading may be the same as in the codes of practice and B.S.449 except for residential buildings. For these the intensity of live or super-imposed load shall be taken as 40 lbs. per sq. feet for slabs and 30 lbs. per sq. feet for beams with no alternative loading.

18) Steel sleepers or trough type of bridges involving large quantities of steel shall be avoided irrespective of cost or convenience.

PART D USE OF STEELS OF HIGHER PERFORMANCE AND RATIONALISATION OF STEEL SECTIONS.

1) We have so far dealt with the use of ordinary mild steel conforming with or similar to B.S.S.15 or Indian Railway standard specification M.1 or M.5 (1948). There are however other steels of higher performance such as "Tiscor" and "Tiscrom" made by the Tata Iron and Steel Ltd. In Great Britain such steels are covered by B.S.S. 548 and 968 and in the United States of America, they are made under the trade names "Corten", "Nax" "Misteel",etc. The specification for high tensile steel used on Indian Railways is I.R.S.M.23.

2) It is obvious that with higher performance, or greater working stress, the quantity of steel required would be correspondingly reduced. Two examples are given. The permissible flexural Strength in accordance with Indian Railways Steel Structures code and Steel Bridge code is 9 t.s.i. for mild steel, whilst the permissible stress for high tensile steel is nearly 40% higher, namely 13.5 t.s.i. Again flexural stress according to the old B.S.S. 449 was 8 t.s.i. and this has now been to 10 t.s.i. for steel STRUCTURES. On the other hand, the revised B.S.S.449 gives working stresses of 15 and 13 t.s.i. respectively for steels to B.S.S.548 and 968

The committee therefore recommends an increase in the production of high tensile steels in the country and if imports are necessary, to import high performance steels in preference to other steels.

3) It is wellknown that we in this country have so far been producing rolled steel sections conforming to British Standard specifications. In many respects, they have proved heavy and wasteful because of their limited range. For example, the common practice for stanchions carrying heavy loads is to use a standard joint with plates attached to the flanges. In the USA and in some of the countries of the Continent of Europe, they have developed what are known as broad or wide flanged beams for this purpose, which are lighter and more economical.

4) As regards beams, the present range available in India is far from adequate and it is necessary in the interest of economy to introduce some of the American type of light or junior joint sections. We realise that it would be difficult, if not impossible, for the main Indian producers to increase the range and variety of rolled sections, but we recommend that when the steel making capacity of the country is increased and new rolling mills are installed, this aspect should not be lost sight of.

5) Similar remarks apply to the rationalisation of other sections such as channels, angles, tees, etc.

6) One other method of saving steel is todopt the use, wherever possible of light gauge pressed steel sections, particularly for secondary members, such as purlins. The Committee is of the opinion that their use would be quite safe, provided proper anti-corrosion measures are taken.

PART B — MISCELLANEOUS.

1) The principal and largest items requiring the use of steel in this country are rails and sleepers. The committee - with satisfaction the research and investigations in hand to develop really economical rail section and a reversal of the tendency to substitute existing rails with heavier rails.

2) The committee is of the opinion that the rerolling industry should be expanded and encouraged under proper Governmental control and supervision, so that all available scrap can be used effectively. The Committee recommends that all scrap arisings such as old rails from the railways should be diverted for rerolling rather than used wastefully for fencings, posts, beams, etc. The Committee recommends the prohibition of the export of scrap.

3) The Committee recommends that a special Committee should be formed with representatives of the Building Research Committee of the Board of Scientific and Industrial Research, the Railways, the Roads Organisation, and the Central Water Power, Irrigation and Navigation Commission, for developing substitute materials and new methods of design fabrication and construction.

4) The Committee noted with disfavour the present practice of inviting steel work quotations on tonnage basis, which gives little or no scope to the designer to produce economical designs. The Committee therefore recommends that wherever possible quotations for steel work should be invited on a lump sum basis subject to compliance with Standard Specifications and Codes of Practice.

5) The Committee was informed that the present practice of making small allocations for a large number of different jobs, led to large quantities of steel lying idle. The Committee therefore recommends that more steel for fewer jobs should be allocated in proper sequence, i.e. stanchion sections should be supplied first and purlins last.

6) The Committee was informed that the present practice of making official authorities such as the Provincial Controllers, Railways, etc. supplied steel in stock lengths and sizes, rather than in those actully required. This leads to considerable wastage which, in the opinion of the Committee, can be avoided by following the proper practice of supplying steel in correct sizes and lengths.

7) The Committee recommends the use of cast iron instead of steel for compression members wherever possible.

8) As regards imports, the Committee recommends that we should, as far as possible, import only those sections which are not made in the Country.

9) As regards steel bars of the reinforcement of concrete, the Committee recommends that deformed bars should be utilised as far as possible in order to increase the permissible bond stress. Indian Steel mills should be encouraged to undertake the manufacture of...

manufacture of such bars.

10) The Committee recommends [redacted] in many cases the use of substitute materials, would increase cost but recommends that cost alone should not be the final criterion. So long as the acute shortage of steel continues, the Committee recommends that substitute materials should be used even if it means an increase in cost upto 25%.

11) The Committee considers that an improvement can be brought about in the long runonly through a healthy and independent profession of consulting Engineers and recommends that Government and other public bodies should encourage the profession of Indian consulting Engineers.

## GENERAL SECRETARY'S NOTE.

The Main report consisting of fifteen pages is circulated to members. The annexures as detailed in the contents page will be placed on the table. The Recommendations of the sub-committee are contained under sections 3,4,5,6 & 7 fof the report. The Council may record its thanks to the Governor, Convenor Dr. A.N.Pandya and the members of the sub-committee for their very valuable report and forward the same with any observations which it may wish to add to the Government of India. This is the first time that the Government of India had approached the Institution of Engineers for advice and the sub-committee has taken great pains in preparing its report. Comments and suggestions from the members would be welcomed.

R.D.Ratnagar, 4.8.50.

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hss.28/5

No.SC(A)-4(51)/II.
Government of India.
Ministry of Commerce and Industry.

New Delhi, the 15th September, 1953.

From

R.D.Saksena, Esquire,
Deputy Secretary to the Government of India.

To

All State Governments and all State Steel Licensing Authorities.

Subject:- Release of stocks of Registered Stockists including Un-Registered Re-rollers.

Sir,

I am directed to enclose herewith a copy of Notification authorising 'free Sale' of stocks of iron and steel lying with Registered Stockists including Un-Registered Re-rollers, for more than 60 days.

2. In the context of the present steelposition, Government of India are not in favour of 'free Sale' of any category of steel. However, with a view to minimise the difficulties experienced by the re-rolling Mills on account of the accumulation of finished steel at their yards and by other Registered Stockists due to accumulation of stocks and also to ensure a continuous flow of materials from the Main Producers and Registered re-rollers to the Registered Stockists/consumers, it has been decided to afford some relief to them for the capital blocked against stocks accumulated for more than 60 days and which remain (a) either uncovered by permits or (b) covered by permits but for which no financial arrangements have been made by the allottees within the period of validity of the permit. It is understood that this position is due to the slow movement at the Registered Stockists' end, as a result of either permits not being issued by the State Governments within a reasonable time or such permits, as are issued, not being cashed by permit holders and to the consequent reluctance on the part of the Registered Stockists to purchase materials from the Main Producers and Registered Re-rollers due to the general slump conditions and contraction of credit facilities.

3. I am to express the hope that the State Governments will take suitable steps to ensure quick disposal of the stocks with the Registered Stockists and Un-registered Re-rollers by issuing permits freely and by allowing the Stockists to sell, without permits, whatever materials the State Governments are unable to allocate within a period of 60 days, without stipulating any conditions contrary to the spirit of the attached Notification, e.g. quantitative/destination limits, in regard to these free sales after 60 days.

Contd.....

I am to request that the State Steel Licensing Authorities may be directed that they should try and issue permits to parties who are in a position to make use of the allotment and ensure that if and for as possible, the Registered Stockists do not carry any stocks for more than 60 days. If, however, any Registered Stockist is found to be mis-using this relaxation, the State Government are at liberty to recommend the removal of that particular Registered Stockist from the records of the Iron and Steel Control and such recommendations will normally be accepted by the Iron and Steel Controller. The Action taken in the matter may kindly be intimated to this Ministry and to the Iron and Steel Controller, Calcutta.

Yours faithfully,

Sd/-(D.D.Saksena)
Deputy Secretary to the Government of India.

No.SC(A)-4(61)/II.

Copy to the Iron and Steel Controller (Attn. Shri N.R.Reddy), Calcutta, for information, with reference to his Memorandum ISC/CDN/2/A/4(Q)/3254, dated the 5th September 1953.

Copy to the Ministry of Food and Agriculture (Agriculture), New Delhi.

By order, etc.,

Sd/-(D.D.Saksena)
Deputy Secretary to the Government of India.

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Government of India.
MINISTRY OF COMMERCE AND INDUSTRY.

New Delhi, the 15th September, 1952.

NOTIFICATION.

NO.SC(A)-4(51)/II. The following notification issued by the Iron and Steel Controller, Calcutta, under the clauses 4 and 5 of the Iron and Steel (Control of Production and Distribution) Order, 1941, is published for general information:-

"In pursuance of the provisions of clauses 4 and 5 of the Iron and Steel (Control of Production and Distribution) Order, 1941, I hereby order that no permit shall be necessary for the acquisition, within the Union of India, by any person from a person other than a Registered Producer or a Controlled Stockholder, or for the disposal, within the Union of India, by a person other than a Registered Producer or a Controlled Stockholder to any person, of any quantity of iron and steel from such stocks as were held by a person other than a Registered Producer or a Controlled Stockholder for a period exceeding sixty days from the date of receipt by the State Steel Licensing Authority of first intimation of such stocks, but which remain either (a) uncovered by permits or (b) covered by issue of permits, but for which no financial arrangements have been made by the allottees within the period of validity of the permits issued.

2. This relaxation shall not affect the statutory selling prices of such categories of iron and steel and shall be subject to the following conditions:-

1) - Every person other than a Registered Producer or a Controlled Stockholder shall submit, at the end of each calender month, to the State Steel Licensing authority concerned, a return showing the details of the stocks to which the relaxation referred to in paragraph above is applicable, indicating the number and date of the letter by which such stocks were reported to the State Steel Licensing Authority in so as to reach the State Steel Licensing Authority not later than the 10th of the succeeding month.

CONTD.....

ii) If a person holding a valid permit approaches a person other than a Registered Producer or a Controlled Stockholder, such Permit should be honoured, even though the period referred to in paragraph 3 above has expired.

C.R.Natesan,
Iron and Steel Controller.

Sd.(D.D.Johsona)
Deputy Secretary to the Government of India.

To

The Manager,
Government of India Press,
New Delhi.

No.SC(A)-4(51)/II.

Copy to:-

1. Ministry of Food and Agriculture (Agriculture), New Delhi, for information.

2. Law Officer (with one spare copy), Central Enforcement Directorate, New Delhi.

By order, etc.

Sd/-

(M.Hajmadi)
Under Secretary to the Government of India.

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Note on the working of the iron & Steel control in the Bombay State.

This department is mainly concerned with the distribution of the general public quota of iron and steel for non-agricultural purposes including the demands of the small scale manufactures of consumer goods and the refugee fabricators and the demands falling under the categories of "Government Developement Schemes". For this purpose allotments are received every quarter from the Goverment of India and the detailed distribution work is done through the Registered Stockholders who actually handle the quotas for the non-agricultural purposes. In the case of the Government Development Schemes the actual releases are made by the Iron and Steel Controller, Calcutta by issue of quota certific-ates on the Controlled Stockists or on the Producers as the case may be on receipt of recommendations from this office for individual scheme. The work of recommendation for the Government Development Schemes is done through the State Steel Co-ordinating Committee. The distribution of the non-agricultural quota for general public is done in the following manner. The quota is divided into two main classes viz. for building purposes and for small scale manufacturers of consumer goods including the refugee fabricators. A separate quota for the refugee fabricators was being allotted till period II/ 52 but after that it has been merged into the State Non-agricultural quota. The building quota is being distributed according to the policy laid down by this Government of Bombay. Releases to the small scale manufacturers of consumers goods are made on the recommendations of the Director of Industries, Bombay and to the Refugee Fabricators on the recommendations of the Rehabilitation Department of this State.

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The State also receives a separate quota for Cottage Industries which is distributed as per the recommendations of the Joint Registrar of Industries Co-operatives and Village Industries, Bombay State, Poona. The Steel Processing Industries , engaging less than 100 workers have also since period I/ 51 be en left to the care of the State Authority by allotting them a bulk quota every quarter. The Director of Industries, Bombay, entertains their applications and after scrutiny of the demands makes recommendations to this office for iss-ue of the quota certificates in their favour which they cash from the Controlled Stockists.

All other categories of demands are met by the Iron and Steel Controller, Calcutta on recommendations of the concerned Co- ordinating authorities. The Iron and Steel Controller, Calcutta is also in charge of Production and Price Control on iron and steel.

Under the provisions of the existing Iron and Steel ( Control of Production and Distribution) Order 1941 and the Iron and Steel (Scrap Control) Order, 1943, persons other than a Registered Producer, a controlledor registered stockholder are free to sell iron and steel including scrap to any person without any licence or permit from the competent authority but subject to price control. Similarly there is no ban on movement of iron and steel except outside the Indian boundaries. This free sale of iron and steel by persons other than the Registered,- Producers, Controlled and Registered Stockists and the free movement within the Indian Union had to some extent resulted in black market activities when the supply position of iron and steel was acute and there were pent up demands of the general public which were not satisfied during the War time.

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Since the beginning of the year there has been improvement in the supply position as private importers were allowed to import iron and steel from abroad. On the whole present distribution system in this State has helped the general public in getting their genuine requirements within a reasonable time and so long the production of iron and steel has not come to the level of the demands it seems desirable that the control should be continued. Generally the public require sheets and roinds for their buildings and these two categories are still in short in supply.

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Answers to the questionaire accompanying the Government of India, Ministry of Commerce and Industry letter No. I/CCC/52 dated the 27th. October 1952 in so far as (1) Iron and Steel (Control and of Production and Distribution ) Orders, 1941 and the (2) Iron and Steel ( ~~Iron and Steel~~ (Scrap Control ) Order, 1943 are concerned.

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Question No. 1. How has the working of the Essential Supplies (Temporary Powers ) Act 1946, the Supply and Price of Goods Act, 1950, and the Drugs (Control ) Act, 1950 and the orders thereunder reacted on the general economy of the country, in particular on the production, supply, distribution and the price structure of the commodities under control?

Answer. This Department is in charge of releasing iron nd steel to the general public of the State of Bombay for non-agricultural purposes. and for Government Departments for their Development Schemes. The distribution to the general public of this State of iron and steel for non-agricultural purposes, in accordance with the policy laid down by this Government, has helped considerably in meeting their demands for this material in an equitable and systematic way.

Question No. 2. How has the recent relaxation of controls in respect of certain commodities affected the economy of the country?

Answer. The control on certain categories of iron and steel has only been recently relaxed and it is too early to state how it has affected the general economy of the country.

Question No. 3. Do you consider that controls on any of the commodities should be totally removed? If so please give reasons.

Answer. This Department is not in favour of removal of the control on iron and steel as there has been no appreciable improvement in the supply position in relation to demand so as to justify removal of controls.

Question No. 4. Do the present difficulties in transport necessitate the continuance of controls on any of the commodities?

Answer. No major transport difficulites have been observed in respect of the movement of iron

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and steel.

Question No. 5. Do you ~~know~~ consider that control of any or all the commodities should be in any way relaxed? What, according to you, should be the minimum measure of control?

Answer. Iron and Steel contain a number of categories which are further sub-divided into sizes. These are used according to specific requirements of particular consumer or industry. It is possible that in some cases, they may not move as adequately as other categories. There is no objection to permit free sale by the Stockists for such non moving categories. Steps have already been taken in this direction.

Question No. 6. What measures do you suggest to prevent the possibility of hoarding, profiteering, and soaring of prices consequent on the removal of relaxation of such controls?

Answer. This Department is not in favour of removal of entire control. In regard to relaxation please see the answer to the previous question.

Question No. 7. Are any of the features of the existing control system faulty or objectionable ? Can you make any suggestions for improving the system without making it less effective?

Answer. The existing system appears generally sound.

Question No. 8. Are the existing provisions relating to detection, investigation and trial of offences for contravention of the control Laws and the punishments and penalties therefore adequate? Are these provisions having any deterrent effect? Do you suggest any modifications therein?

Answer. ~~The existing system appears~~ Provisions of the Control Orders for iron and steel are considered adequate, particularly in view of the fact, that this Government Organisation has kept a rigid vigil on the use of iron and steel by the permit holders.

Almost all the cases of misuse of iron and steel that have been detected by the field staff of this Government Organisation have been successful in the Courts and this has had

a deterrent effect in minimising the misuse of iron and steel.

**Question No. 9.** Do you suggest any improvement in the present set up of the administrative, executive and enforcement machinery?

**Answer.** Under the existing policy the demands of consumers have been classified into different heads and different authorities have been appointed for distribution of the Quotas of ~~iron and steel for distribution~~ iron and steel for these ceonsumer heads with the result that even in emergency diversion of quota meant for agricultural pur-poses is not permissible to meet a non agricultural demand and vice-versa. There should be some flexibility in this respect and the matter should be left to the State government.

**Question No. 10.** Are you aware of any difficulties experienced in the enforcement of the control laws? What are your suggestiins to overcome them?

**Answer.** No.

**Question No. 11.** Do you suggest any modifications in the existing policy and practice of delgation of powers under the control laws?

**Answer.** The Powers so far delegated to the State Authorities are adequate and therefore , there are no more suggestions to make in this respect.

**Question No. 12.** Do you consider that appointment of Advisory Control Committees at the Centre, in the States and in the Districts will improve the working and administration of the controls?

**Answer:** No such Advisory Committee appears necessary in the States or in the Districts as the control of iron and steel has been administered quite efficiently by existing machinery in accordance with this policy laid down by the State Government so as to secure utmost equity.

**Question No. 13.** Do you suggest any modifications in the existing policy of the fixation of prices with

respect to any of the commodities under control?

Answer. The Fixation of prices of iron and steel is done by the Iron and Steel Controller, Calcutta and, therefore, thereare no remarks to offer.

Question No. 14. Have you any suggestions to make for simplifying and coordinating the laws relating to controls?

Answer. No.

Question No. 15. Have you any other suggestions to make?

Answer ..... No.

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